

REMARKS

Claims 38, 42 and 43 are amended. Claims 38, 42-43, 46-53 and 56-59 are pending in the application.

Claims 38, 42-43, 46-49 and 50-53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over various cited combinations of Matsuda, U.S. Patent No. 6,143,597; Fujii, U.S. Patent No. 5,661,319; and Park, U.S. Patent No. 5,780,115. The Examiner is reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Claims 38, 42-43, 46-49 and 50-53 are allowable over the various cited combinations of Matsuda, Fujii, and Park for at least the reason that the references, individually or as combined, fail to disclose or suggest each and every limitation in any of those claims.

As amended, independent claim 38 recites a pair of electrodes with a dielectric material therebetween, where the dielectric material comprises a composite of two immediately juxtaposed and contacting layers of an identical capacitor dielectric composition which comprises a member selected from the group consisting of a strontium titanate, a strontium bismuth titanate, a lead lanthanate zirconia titanate, and mixtures thereof. Claim 38 additionally recites that the discrete layers are crystalline and comprise an interface characterized by a perceptible change in crystallinity from one layer to the other characterized by a perceptible lateral shift in grain boundary from one layer to the other. Matsuda discloses a capacitor construction having a first dielectric layer 5 made of $\text{SrBi}_2\text{Ta}_2\text{O}_9$ and a second dielectric layer 6 on the first dielectric layer (col. 2, ll. 58-67).

Matsuda further discloses a particular embodiment having a first and second dielectric layers each comprising $\text{SrBi}_2\text{Ta}_2\text{O}_9$ (col. 3, ll. 46-55). Matsuda does not disclose or suggest the claim 38 recited two juxtaposed and contacting layers of the identical capacitor dielectric composition selected from a strontium titanate, a strontium bismuth titanate, a lead lanthanate zirconia titanate, and mixtures thereof.

The Examiner indicates reliance upon Fujii as disclosing a capacitor having two dielectric layers formed of Ta_2O_5 (present Action at pages 2-3). The Examiner further indicates that it would be obvious to modify Matsuda by incorporating tantalum pentoxide materials disclosed by Fujii. Without admission as to the propriety of the Examiner's statements, claim 38 is amended to no longer recite Ta_2O_5 . Accordingly, claim 38 is not rendered obvious by the combination of Matsuda and Fujii.

As indicated by the Examiner at page 3 of the present Action, Park is relied upon as showing titanium nitride electrodes. However, as combined with Matsuda and Fujii, the electrodes disclosed by Park do not contribute towards suggesting the claim 38 recited immediately juxtaposed and contacting layers of identical compositions selected from strontium titanate, strontium bismuth titanate, and lead lanthanate zirconia titanate or mixtures thereof. Accordingly, independent claim 38 is not rendered obvious by the cited combinations of Matsuda, Fujii, and Park and is allowable over these references.

Dependent claims 42 and 43 are amended to properly depend from independent claim 38. Claims 42-43, 46-49 and 50-53 are allowable over the cited combinations of Matsuda, Fujii, and Park for at least the reason that they depend from allowable base claim 38.

Claims 56-59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over

various combinations of Matsuda, Fujii, Park and Roh, U.S. Patent No. 5,783,253. Claim 56 recites a capacitor comprising a first capacitor electrode and a capacitor dielectric layer over the first capacitor electrode where the dielectric layer has a lower portion and an upper portion, the upper and lower portions each comprising identical barium strontium titanate compositions. Claim 56 further recites that the lower and upper portions are immediately juxtaposed, the upper portion having a perceptible change in crystallinity relative to the lower portion characterized by perceptible interface line between the two discrete portions, and a perceptible lateral shift in grain boundaries across the interface. Claim 56 is allowable over the combination of Matsuda, Fujii and Park for at least reasons similar to those discussed above with respect to independent claim 38.

With respect to Roh, the Examiner indicates at page 4 of the present Action that Roh is relied upon as disclosing two immediately juxtaposed and contacting barium strontium titanate dielectric layers 6 and 7. As set forth in applicant's previous response with respect to claim 56, Roh specifically indicates utilization of differing BST compositions to overcome contamination and degradation of electrical characteristics of films which can occur utilizing a single composition. As indicated in the previous response, this disclosure clearly teaches away from the claim 56 recited lower and upper portions of a capacitor dielectric layer comprising identical barium strontium titanate compositions and having a perceptible change in crystallinity. Accordingly, Roh cannot be relied upon as a basis of a 103 rejection and the present reliance upon such disclosure is improper. Accordingly, applicant requests withdrawal of such rejection in the Examiner's next action.

Dependent claims 57-59 are allowable over Matsuda, Fujii, Roh and Park for at least the reason that they depend from allowable base claim 56.

For the reasons discussed above claims 38, 42-43, 46-49, 50-53 and 56-59 are allowable. Accordingly, applicant respectfully requests formal allowance of such pending claims in the Examiner's next action.

Respectfully submitted,

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